

1. An antibody or an antigen-binding fragment thereof that binds to O-glycan mucin-type glycoprotein MUC16, comprising three variable heavy domain complementarity determining regions (CDR)₁ CDR H1, H2, and H3), and three variable light domain CDR (CDR L1, L2, and L3), wherein the CDR H1, H2, H3, L1, L2, and L3 comprise the amino acid sequence comprising:

CDR H1 :	(SEQ ID NO: 1)
GFTFSTF,	
CDR H2 :	(SEQ ID NO: 2)
SSGSST,	
CDR H3 :	(SEQ ID NO: 3)
SGYDYDPIYYALDY,	
CDR L1 :	(SEQ ID NO: 4)
RASESVDNYGISFMN,	
CDR L2 :	(SEQ ID NO: 5)
GASNQGS, and	
CDR L3 :	(SEQ ID NO: 6)
QQTKEVPW,	

2-3. (canceled)

4. The antibody or the antigen binding fragment thereof of claim **1**, further comprising four variable heavy domain framework regions (HFR)(HFR 1, 2, 3, and 4), wherein the HFR 1, 2, 3, and 4 comprise the amino acid sequence comprising:

HFR 1 :	(SEQ ID NO: 7)
EVQLVESGGGLVQPGGSRKLSCAA,	
HFR 2 :	(SEQ ID NO: 8)
GMHWVRQAPEKGLEWVAYI,	
HFR 3 :	(SEQ ID NO: 9)
IYYGDTLQGRFIISRDNPKNTLFLQMTSLRSEDTAMYCAR, and	
HFR 4 :	(SEQ ID NO: 10)
WGQGTSVTVSS.	

5. The antibody or the antigen binding fragment thereof of claim **1**, further comprising four variable light domain framework regions (LFR)₁ (LFR 1, 2, 3, and 4), wherein the LFR 1, 2, 3, and 4 comprise the amino acid sequence:

LFR 1 :	(SEQ ID NO: 11)
DIVLTQSPASLAvgQRATISC,	
LFR 2 :	(SEQ ID NO: 12)
WFQQKPGHPPKLLIY,	

-continued

LFR 3 :
(SEQ ID NO: 13)
GVPARFSGSGSGTDFSLNIHPMEEDDAAMYFC,
and

LFR 4 :
(SEQ ID NO: 14)
FGGGTKVEIKR.

6. The antibody or the antigen binding fragment thereof of claim **1**, comprising a variable heavy domain (V_H) comprising the amino acid sequence comprising:

(SEQ ID NO: 15)
EVQLVESGGGLVQPGGSRKLSCAAAGTFSTPGMHWVRQAPEKGLEWVAY
ISSGSSTIYYGDTLQGRFIISRDNPKNTLFLQMTSLRSEDTAMYCARSG
YDYDPIYYALDYWGQGTSVTVSS.

7. The antibody or the antigen binding fragment thereof of claim **1**, comprising a variable light domain (V_L) comprising the amino acid sequence:

(SEQ ID NO: 16)
DIVLTQSPASLAvgQRATISCRAESVDNYGISFMNWFQQKPGHPPKL
LIYGASNQGSGVPARFSGSGSGTDFSLNIHPMEEDDAAMYFCQQTKVEPVW
TFGGGTKEIKR.

8. The antibody or the antigen binding fragment thereof of claim **1**, comprising a variable heavy domain (V_H) comprising the amino acid sequence comprising:

(SEQ ID NO: 15)
EVQLVESGGGLVQPGGSRKLSCAAAGTFSTPGMHWVRQAPEKGLEWVAY
ISSGSSTIYYGDTLQGRFIISRDNPKNTLFLQMTSLRSEDTAMYCARSG
YDYDPIYYALDYWGQGTSVTVSS,

and a variable light domain (V_L) comprising the amino acid sequence:

(SEQ ID NO: 16)
DIVLTQSPASLAvgQRATISCRAESVDNYGISFMNWFQQKPGHPPKL
LIYGASNQGSGVPARFSGSGSGTDFSLNIHPMEEDDAAMYFCQQTKVEPVW
TFGGGTKEIKR.

9. The antibody or the antigen binding fragment thereof of claim **1**, wherein the antibody is an IgA, IgD, IgE, IgG, or IgM.

10. The antibody or the antigen binding fragment thereof of claim **1**, wherein the antigen-binding fragment is a single-domain antibody (sdAb) or a single-chain variable fragment (scFv).

11. The antibody or the antigen binding fragment thereof of claim **10**, wherein the sdAb comprises three CDR (CDR1, 2, and 3) comprising SEQ ID NO:1, SEQ ID NO:2, and SEQ ID NO:3, respectively.

12. The antibody or the antigen binding fragment thereof of claim **10**, wherein the sdAb comprises three CDR (CDR1, 2, and 3) comprising SEQ ID NO:4, SEQ ID NO:5, and SEQ ID NO:6, respectively.